REMARKS

Reconsideration and withdrawal of the rejections of the application are requested in view of the amendments and remarks presented herein, which place the application into condition for allowance.

I. STATUS OF CLAIMS AND FORMAL MATTERS

Claims 1-17 and 39-41 are currently under consideration. Claims 1 and 39-41 are hereby amended without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents.

Support for the amendments can be found, for example, in paragraphs [0037] and [0059]-[0060] of the Application as published. No new matter is added.

It is submitted that the claims are patentably distinct over the prior art and that these claim are and were in full compliance with the requirements of 35 U.S.C. § 112. The amendments of the claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §§ 101, 102, 103 or 112; but simply for clarification and to round out the scope of protection to which Applicant is entitled.

II. THE REJECTIONS UNDER 35 U.S.C. § 103 HAVE BEEN OVERCOME

Initially, Applicant submits that establishing a *prima facie* case of obviousness requires that the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP 2143. Further, in order to ground an obviousness rejection, there must be some teaching which would have provided the necessary incentive or motivation for modifying the reference's teachings. *In re Laskowski*, 12 U.S.P.Q. 2d 1397, 1399 (Fed. Cir. 1989); *In re Obukowitz*, 27 U.S.P.Q. 2d 1063 (BOPAI 1993). As stated by the Court in *In re Fritch*, 23 U.S.P.Q. 2d 1780, 1783-1784 (Fed. Cir. 1992): "The mere fact that the prior art may be modified in the manner suggested by the Office Action does not make the modification obvious unless the prior art suggests the desirability of the modification." Also, the Examiner is respectfully reminded that for the Section 103 rejection to be proper, both the suggestion of the claimed invention and the expectation of success must be founded in the prior art, and not Applicants' disclosure. *In re Dow*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). Furthermore, the Supreme Court has recently reaffirmed the factors set out in *Graham v. John Deere Co. of Kansas City*,

383 U.S. 1, 17-18: "[T]he scope and content of the prior art are determined; differences between the prior art and the claims at issue are...ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___ (2007).

Section 103 over Boehm

Claims 1, 2, 4, 7, 13, 15, 16, 39, and 41 were rejected under Section 103(a) as allegedly being unpatentable over Boehm (U.S. Patent No. 4,897,300). This rejection is traversed.

Instant claim 1 recites:

> "**A paper security fibre** having a plurality of regions printed on front and rear sides of said fibre, wherein said regions are coloured and the colours are visible only under ultra-violet light, **whereby the fibre is suitable for mixing with slurry paper pulp for paper formation**."

Accordingly, one embodiment of the instant invention relates to a paper security fibre having a plurality of regions printed on front and rear sides of the fibre. The regions are coloured and the colours are visible only under ultra-violet light. Additionally, the fibre is suitable for mixing with slurry paper pulp for paper formation.

As understood by the Applicants, Boehm is concerned with a security thread, which is different from a security fibre. In the Final Office Action dated March 3, 2009 the Examiner has cited the definition of fibre from the Mexxx-Webster's Online Dictionary as showing that there is no difference between fibres and threads. However, the present Application is concerned with security fibres and Boehm is concerned with security threads. Applicants respectfully submit that these terms have clearly defined, and fundamentally different, meanings in the art.

A number of documents are enclosed herewith that refer to the terms "security thread" and "security fibre" in relation to banknotes and the like, and are provided as evidence of the use of those terms in the art. Those documents are:

1. An extract from the website of the company De La Rue (www.delarue.com) giving definitions of the terms "security threads" and "embedded security fibres);

2. An extract from the website of the company Arjo Wiggins (www.security.arjowiggins.com) giving a definition of the term "security threads";
3. An extract from the website of the company Arjo Wiggins (www.security.arowiggins.com) giving a definition of the term "fibres";
4. An article entitled "Tell-Tale Signs of Security" published in the newsletter "Currency News" in May 2005 in which both security threads and security fibres are described.
5. A definition of the term "security thread" as given by Wikipedia, an online encyclopaedia (en.wikipedia.org).

It is clear from the enclosed documents that the term "security thread" refers to discrete, relatively large threads that are embedded into a finished paper product (typically one or two per product, usually in a particular orientation), whereas the terms "security fibre" refers to fibres, which are generally much smaller than threads, and are randomly distributed throughout a paper product, with those fibres being introduced (usually in far greater numbers) during the paper making process. Security threads are typically made out of metal foil or plastic (see the Wikipedia definition) or "synthetic tear-proof" material as required by Boehm. The Examiner has argued that the synthetic tear-proof material is a carrier material. The thread of Boehm is formed of the synthetic tear-proof carrier material, with ink thereon. If the carrier is transparent the ink can be seen from the back of the carrier through the carrier (column5, line 9-13). That would not be the case if another layer of material was present and therefore the carrier material is the material from which the thread is made. Boehm thus discloses that the thread should be made from a synthetic tear-proof material. The fibres of the present invention on the other hand are made out of paper.

As noted in the head note of the Currency News article, security threads are security features that "the public and professionals alike are most familiar with". That article clearly distinguishes the well known security threads from "security fibres", discussed in column 3 of the first page of the article.

The definition of the terms "security thread" and "security fibre" given above are consistent with the uses of those terms in the present application and in Boehm. It is clearly stated in the opening paragraph of Boehm that Boehm is concerned with security paper having a security thread. The security thread is described as being "embedded" in the security paper and

"running from edge to edge" of the paper (column 1, lines 3 to 7). Further, claim 1 of Boehm calls for a "security paper in particular a bank note, having embedded therein, running from edge to edge, a security thread". Suitable embedding processes are described at column 5, lines 25 to 34.

The fibres of the present invention are fundamentally different to the security thread of Boehm. The security thread of Boehm must be suitable for running from edge to edge of the paper (column 1, lines 3 to 7). The fibres of the present invention are small; for example, the fibre of the preferred embodiment is 5mm long and 0.2mm wide (consistent with the typical dimensions given in the Currency News article referred to above). That is not large enough to run from edge to edge of a banknote. The fibres claimed are suitable for mixing with slurry paper pulp for paper formation. There is no need to provide machinery for embedding the fibres into the paper product.

As described in Boehm, and as discussed in the enclosed documents, security threads are relatively large and are embedded in a finished paper product. As described in the description of the present application, and as discussed in the enclosed documents, fibres are much smaller and typically form part of the paper pulp so that they become an integral part of the finished paper product.

It is submitted that the teaching of Boehm is not applicable to security fibres. It is further submitted that Boehm offers no guidance to the skilled person regarding how to modify known fibres in order to address the problems of the prior art, as identified on page 1 of the present application. There is no suggestion in Boehm of providing **a paper security fire having a plurality of regions printed on front and rear sides of said fibre**, wherein said regions are coloured and the colours are visible only under ultra-violet light, **whereby the fibre is suitable for mixing with slurry paper pulp for paper formation**, as recited in instant claim 1.

Modified claim 1 is therefore patentable over Boehm and claims 2, 4, 7, 13, 15 and 16 are patentable over Boehm at least by virtue of their dependence on claim 1. Modified claims 39 and 41 are patentable over Boehm for similar reasons *mutatis mutandis* as those above.

Section 103 over Boehm in view of Kaule *et al.*

Claims 2-7, 14, and 40 were rejected under Section 103(a) as allegedly being unpatentable over Boehm in view of Kaule *et al.* (U.S. Patent No. 4,756,557). This rejection is traversed.

Applicants respectfully submit that Kaule et al, like Boehm, is concerned with security threads. Kaule et al does not supply the teaching that is lacking in Boehm as discussed above and claims 2-7 and 14 are therefore patentable at least by virtue of their dependence on claim 1. Since Kaule et al does not supply the teaching that is lacking in Boehm as discussed above, claim 40 is patentable over Boehm and Kaule et al, for the same reasons m*utatis mutandis* as claims 1, 39 and 41 above.

Section 103 over Boehm in view of Tillotson

Claims 8-12 were rejected under Section 103(a) as allegedly being unpatentable over Boehm in view of Tillotson (U.S. Patent No. 3,898,035). This rejection is traversed.

Applicants respectfully submit that Tillotson is concerned with a method of treating coloured yarns, which are clearly very different from paper security fibres, for the manufacture of pile textiles, such as carpets, which is clearly a very different field from the manufacture of security paper. Tillotson does not supply the teaching that is lacking in Boehm as discussed above and claims 8-12 are therefore patentable at least by virtue of their dependence on claim 1.

Section 103 over Boehm in view of Whitehead

Claim 17 was rejected under Section 103(a) as allegedly being unpatentable over Boehm in view of Whitehead (U.S. Patent No. 2,208,653). This rejection is traversed.

Applicants respectfully submit that Whitehead is concerned with paper containing fibres made from organic ester of cellulose. The fibres can be dissolved from the paper without affecting the paper (column 2, lines 1-2). Thus the fibres are soluble in a solvent that does not dissolve paper and the fibres are therefore **not** made of paper. Whitehead does not supply the teaching that is lacking in Boehm as discussed above and claim 17 is therefore patentable at least by virtue of its dependence on claim 1.

Therefore, the combination of Boehm and Whitehead fails to render claim 17 as obvious.

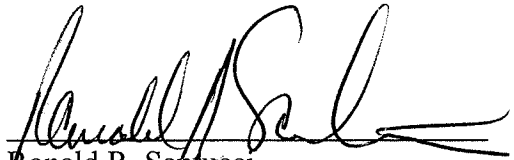
For at least the reasons provided herewith, none of the cited references render the instant claims as unpatentable. Accordingly, reconsideration and withdrawal of all Section 103 rejections are requested.

CONCLUSION

Applicants believe that the application is in condition for allowance. Favorable reconsideration of the application and prompt issuance of a Notice of Allowance are earnestly solicited.

Respectfully submitted,

FROMMER LAWRENCE & HAUG LLP
Attorneys for Applicants

By: 

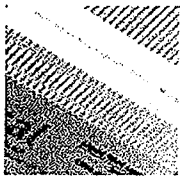
Ronald R. Santucci
Reg. No. 28,988
Tel: (212) 588-0800
Fax: (212) 588-0500

Security Features and Benefits

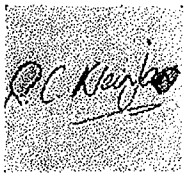
All Portals security features are incorporated into the paper while it is being manufactured, making them part of the substrate itself. These features are thus extremely difficult to counterfeit or alter without degrading the paper itself.

For maximum effectiveness, different types of features are used in various combinations, to make the document secure on more than one level. These range from the most obvious, (overt) like the watermark, through features which need special equipment such as a UV lamp to authenticate them (covert), to the most discreet, known only to a very few people (forensic).

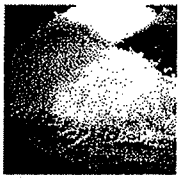
Security features that complement the watermark include :



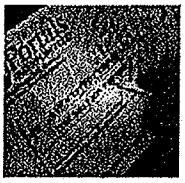
- Security threads. We have developed our own patented process for including these in the paper during manufacture, known as Stardust®. Threads include Cleartext® (issuing authority legend can be read in transmitted light); Thermotext® (thread coated with thermochromic pigment that changes colour when heated, for example by rubbing with a finger); holographic thread; and machine-readable thread. Security threads can be embedded in the paper or 'windowed', a technique developed by Portals Bathford which allows the thread to be seen on the surface of the paper through specially designed openings, such as Port-Hole™ or Chevron.



- Chemical sensitising. Hidden or encapsulated dyestuffs that produce vivid voiding stains on the application of a broad range of chemicals commonly used to tamper with documents.

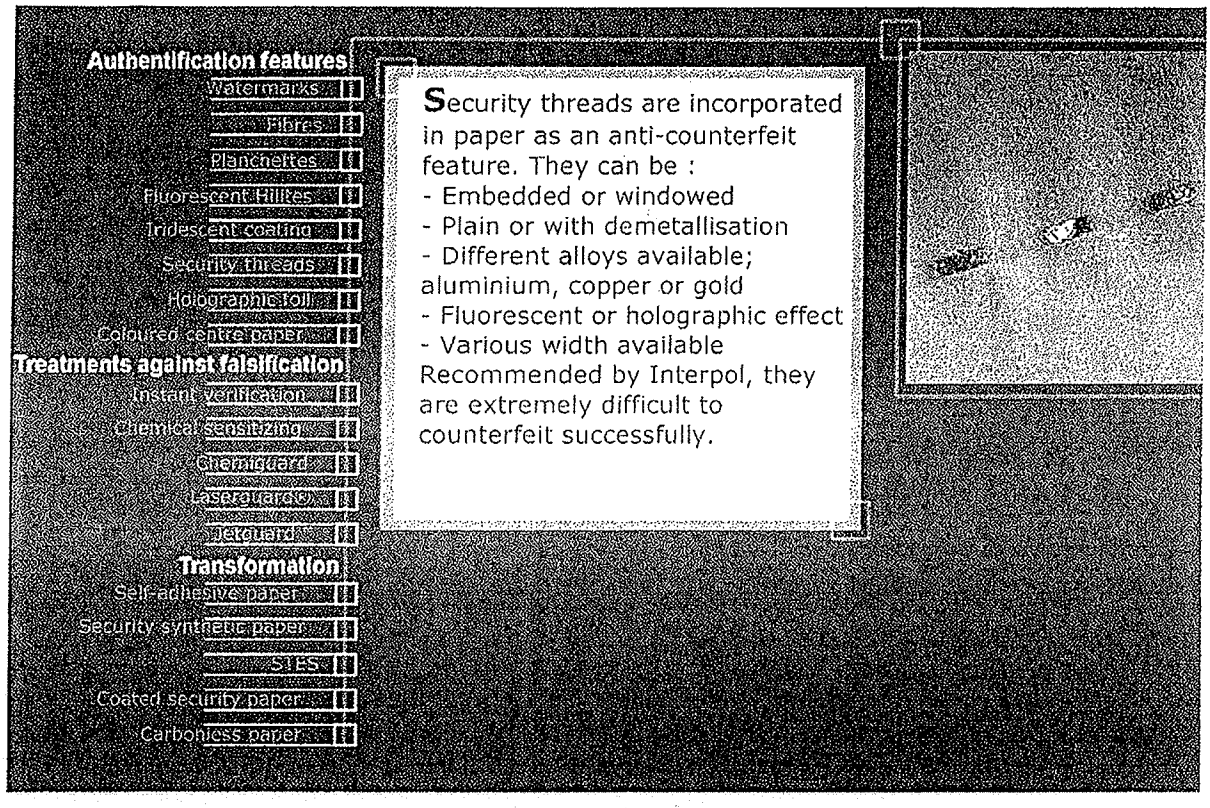


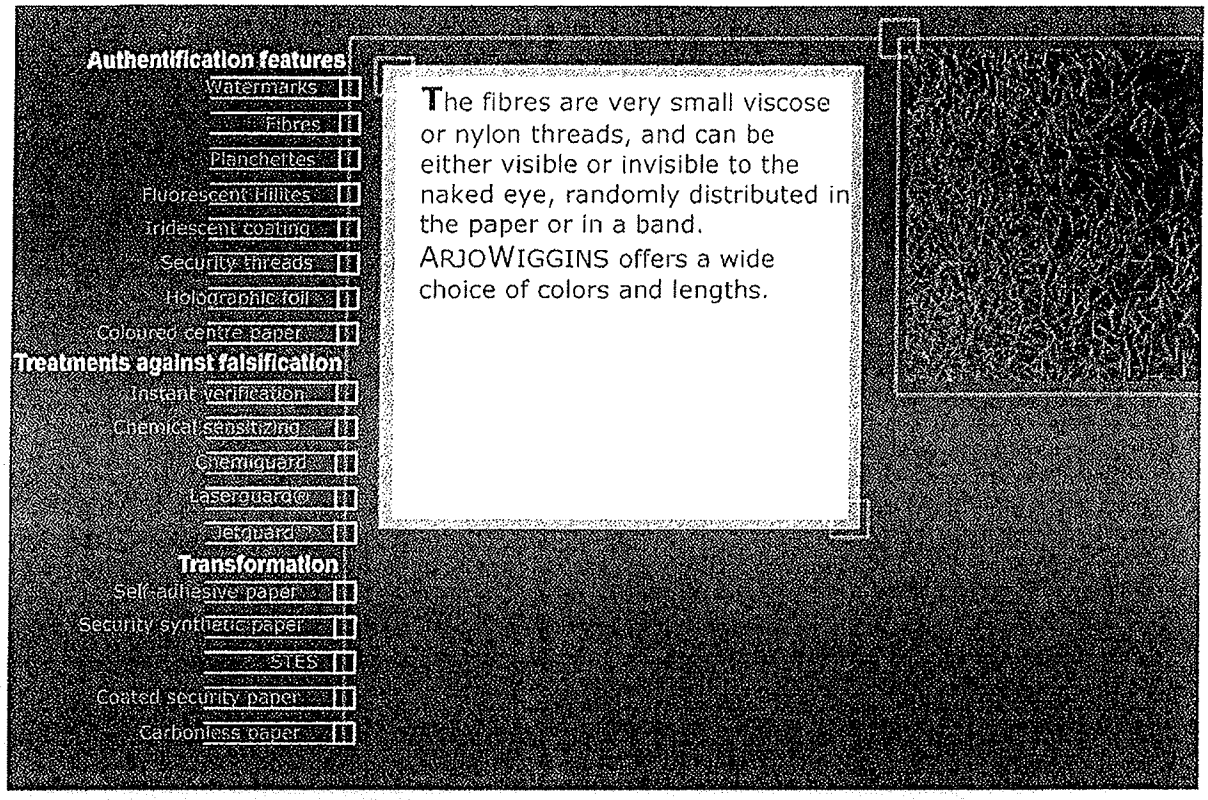
- Embedded security fibres. Synthetic fibres dispersed throughout the paper during manufacture. They are available in a range of colours that are visible in normal light and fluoresce under UV light. We recommend a selected mix of fibres.



- Protection against mechanical erasure can be given by specifying the use of Securitext®, a toner lock system which protects laser printed variable data.

  Portals watermarks are also specifically designed to accept magnetic ink character recognition (MICR).


Authentification features
Watermarks
Fibres
Planchettes
Fluorescent Fibres
Tridescent coating
Security threads
Holographic foil
Coloured centre paper
Treatments against falsification
Instant verification
Chemical sensitizing
Chemiguard
Laseguard
Jetguard
Transformation
Self-adhesive paper
Security synthetic paper
SIES
Coated security paper
Carbonless paper
Security threads are incorporated in paper as an anti-counterfeit feature. They can be :
- Embedded or windowed
- Plain or with demetallisation
- Different alloys available; aluminium, copper or gold
- Fluorescent or holographic effect
- Various width available
Recommended by Interpol, they are extremely difficult to counterfeit successfully.


Authentification features
Watermarks
Fibres
Planchettes
Fluorescent Hilites
Iridescent coating
Security threads
Holographic foil
Coloured centre paper
Treatments against falsification
Instant verification
Chemical sensitizing
Chemiguard
Laserguard©
Jetguard
Transformation
Self-adhesive paper
Security synthetic paper
STEs
Coated security paper
Carbonless paper
The fibres are very small viscose or nylon threads, and can be either visible or invisible to the naked eye, randomly distributed in the paper or in a band. ARJOWIGGINS offers a wide choice of colors and lengths.

CURRENCY NEWS

the confidential newsletter for currency

www.currencynews.info ISSN 0895-9080 MAY 2005 | VOL 3 | NO 5

New Printworks for Malaysia

At a signing ceremony in the presence of the Prime Minister of Malaysia, the Hon Abdullah Ahmad Badawi, Dutch banknote and high security printer Royal Joh Enschedé and Focus Equity Sdn Bhd of Malaysia signed a Memorandum of Understanding for technical cooperation in the production of banknotes and other high security documents in the country.

The MOU is part of a 'smart partnership' between the two companies, and follows commencement of the construction of a new security printing facility in the state of Selangor by Focus Equity. Enschedé will provide expertise and technology to the new plant for the production of banknotes and other high security documents including passport and fiscal stamps. There are no details on the ownership of the new enterprise, although 95% of it is said to be held by local Malaysian interests. The printworks are due to be in production in the second quarter of 2007.

Commenting on the partnership, Joseph Vijay Kumar of Focus Equity said: 'This exchange of MOUs in the presence of His Excellency the Prime Minister is the culmination of five years' planning for Malaysian independence in the production of strategically important security documents including the national currency. We are very pleased to have as our partner a company with the global reputation and expertise of Royal Joh Enschedé.'

In reply, Arie Piet, CEO of Enschedé, said: 'Malaysia has become a technology hub in the graphics arts industry, to which we will be contributing significant know-how in the high security sector. We express

Continued on page 2

Latest Twist in Kenyan Currency Saga

The controversy surrounding the multi-billion shilling tender to produce the new Kenyan currency has taken a new twist with the announcement by the central bank that this has been cancelled after only two of the five firms bidding qualified. According to reports, Royal Joh Enschedé pulled out, citing commitments to other customers, while two others were disqualified on technicalities. The central bank will re-open the tender process in due course and, although it did not state which companies reached the final stage, these are thought to be De La Rue and Giesecke & Devrient (the other two being Orell Füssli and François Charles Oberthur).

The tender for the new currency has been beset by controversy on a number of fronts since the outset, including the decision to guillotine the ten-year contract with De La Rue, the exclusion of Canadian Bank Note and South African Bank Note and the late inclusion of Oberthur despite its passport business being under investigation in the country. The contract is worth in total €100m.

There are currently 193 million notes in

Continued on page 5

CONTENTS

TECHNOLOGY PROFILE

Tell-Tale Signs of Security

The two main substrate-based security features – the ones that the public and professionals alike are most familiar with - are watermarks and threads. But there are a variety of other security features - overt, semi-covert and covert - that are included in banknote and other high security papers for verification at various levels and by many different interested parties. One of the most important groups of these security features is fibres and planchettes, which are used in over 60% of the world's banknotes.

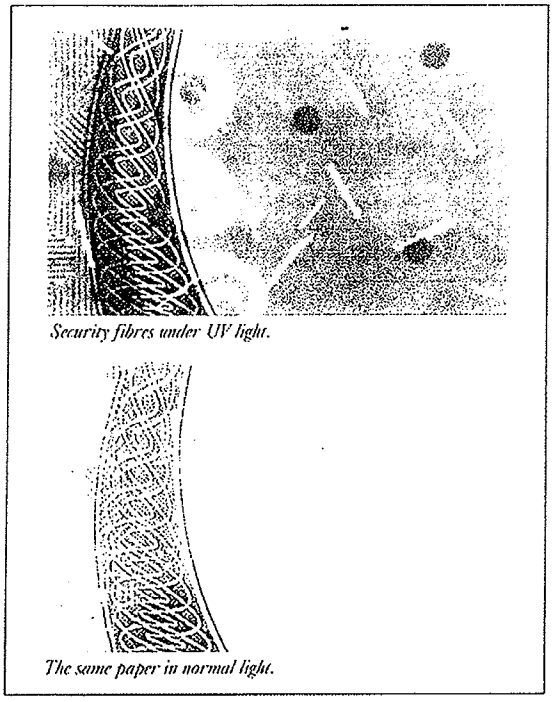
Fibres and planchettes are normally inserted into banknote and security paper during the stock preparation when the 'paper' is still approximately 98% water just prior to its formation as a paper web, resulting in their all-over and random distribution in the paper. Alternatively they can be added virtually simultaneously with the paper web formation to form a band or bands in the paper.

Overt, Covert or Both

These randomly distributed fibres or planchettes can be overt, covert, or a combination of the two. Attempts at reproducing their visual effects by printing lack this random distribution, which can be used as a means of determining genuine notes from counterfeits (a series of notes in which they always appear in the same position are almost certainly fake). One organisation that exploits this is the US Secret Service, which, in its recent presentation at the Banknote 2005 conference in Washington, explained how it uses random features (or to be more precise, non-random features) in notes such as fibres to identify not only counterfeits, but also to identify and build up a pattern of counterfeits from the same source.

Another benefit of overt fibres and planchettes is that they make it harder for counterfeiters to bleach low denomination notes and overprint these with high value denominations (where notes of the same size and either without, or with a common, watermark). The banding of fibres as above also helps overcome this problem.

Furthermore, since fibres are embedded in the paper, they can be distinguished on close examination from printed simulations, which sit on the surface. Polymer planchettes, especially iridescent planchettes which have a characteristic visual appearance, sit on or near the surface and can be isolated and removed with a scalpel using a low power magnifier to provide a separate quick and easy validation test.



Security fibres under UV light.

The same paper in normal light.

But this is a double-edged sword. For example, one reason that planchettes were dropped from the Mexican 50,000 pesos was that some were being removed from genuine notes and then stuck on to counterfeits to make them look genuine! Another reason that they were dropped was because they interfered with the automated quality control inspection systems since, being random, the machine saw them as ink spots or smears and hence rejected the notes (although new inspection systems can be configured to overcome this particular problem).

The real security benefit of both fibres and planchettes, however, lies in a combination of this random distribution and their specific technical nature that enables them to be verified by a variety of means ranging from the naked eye or a generally available device such as a UV light to, at the other end of the spectrum, a high powered microscope or complex machine-read device.

Security Fibres

Short coloured fibres are one of the oldest paper-based security features. As long ago as 1776, the US papermaker Wilcox used them in the banknotes of the rebel United States to make the paper harder for the British to replicate. Today's fibres are made of rayon, paper, nylon or polyester and are typically 3-8mm in length. The paper versions are printed or coated and cut to size whereas the nylon or polymer versions are manufactured by extrusion. The pigment, dye or chemical can be added prior to the extrusion process. Alternatively, the plain extruded polymer can be dyed or chemically-treated afterwards. In either case the extruded polymer is chopped to length. Fibres, whether visible or requiring energy such as UV to become visible, normally have a distinct colour or a colour combination and may be used alone or mixed with another fibre to form a 'pair' such that they can be used as a public verification feature or as a feature for use by professionals or experts.

Planchettes

Planchettes are made by coating or printing paper or polymer and then die

TECHNOLOGY PROFILE

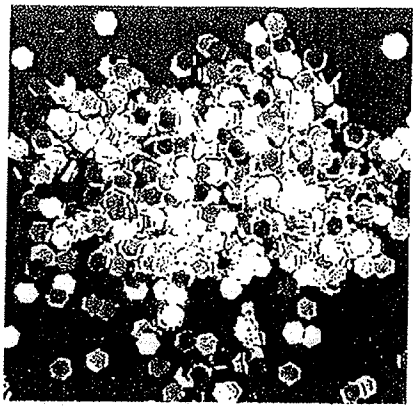
cutting or punching out the planchettes in sizes of 1-1.5mm. These can be in a number of different shapes – eg circular, tri-lobal, elliptical – and like fibres are applied at the 'wet' end of the paper machine. They are usually distributed on or near the surface of the paper whether all over or in bands, particularly the 'polymer' discs as these tend to float to the surface when the paper web is formed. Planchettes come in a variety of visible and invisible forms and some, normally the polymer ones, with a colour shifting iridescence, as first introduced in the Mexican Pesos 50,000 banknote.

Security Developments

Generally speaking a good security technology should be scarce and ideally very difficult to simulate or counterfeit. Since fibres and planchettes are based on commercially-available technology and are relatively easy to manufacture, they are viewed in most quarters as a low cost, low end security feature. To combat this, as in other security technologies, there have been a number of developments recently to increase their complexity and to make it more difficult to make them and consequently to counterfeit or simulate them.

For example Security Papers UK, an independent supplier of fibres and other paper-based security features, has recently introduced a 'rainbow' multi-coloured fibre comprising four colours along its length (red/green/yellow/blue)that fluoresce, providing a covert feature that overcomes the practice by counterfeiters of 'drawing' fibres with commercially-available fluorescent inks. The company's range also includes visible and other forms of invisible fibres and planchettes that are UV or IR detectable and, in the case of planchettes, thermochromic and holographic. The company's patented *Dual Colour* and *Candy Stripe* fibres are now used in the Ukrainian hryvnia and another major currency.

In addition a number of paper manufacturers who produce their own fibres and planchettes and are pioneering new developments. Crane, for example, has recently developed a fibre that, like that of Security Papers UK, has special colours printed in register. Arjo Wiggins offers metallised electrically-conductive fibres that provides an anti-copy feature while Landqart has a photo-luminescent fibre that blinks on and off when viewed under UV light through a revolving polarised filter. Association Goznak has developed shaped fibres with a variety of different profiles – eg star, pentagon, triangle etc – that cannot be reproduced by printing and other common techniques and can be identified by microscope. Goznak has also introduced *Zona*, which is in use in the new Russian series. Zona



Holographic Planchettes.
(Pictures courtesy of Security Papers UK.)

are zoned fibres that have the appearance of a chain with cylinders of different diameters and colours in a specific stepped sequence. Each step or cylinder can be coloured or colourless, UV dull or UV fluorescence of a specific colour. The fibres are a semi-public feature in that they can be examined with a pocket magnifying glass in daylight and with the naked eye in UV light, or an expert feature with a microscope used to examine the specific geometry of the fibres.

a-Dots - A New Addition

In a related development, Honnorat Recherches & Services has recently introduced a-Dots – water-based dyes in an acidic medium that act in much the same way as fibres and are dispersed in paper at the wet end of the paper machine. They can be coloured or invisible, with both types fluorescing in UV light. One version will fluoresce in a different colour from its visible counterpart. The dots can be used as a single technology type or as a mixture of several different types. In addition to fluorescent dots there are opaque dots that are UV or X-ray absorbing, thermochromic dots that change from magenta at low temperatures to white at around 30 degrees, and in development, chemically reactive dots and dots with iridescent or other optical effects.

Somewhat Unpopular with Papermakers, Printers

Despite their security benefits, fibres are not particularly liked by paper makers when volumes are small as a major clean-up is necessary after the production. This is not a problem in long runs, although if the fibres are not the correct size they can clog the machine. Also, unlike threads, which can be removed when recycling waste paper (broke) due to their size and shape, fibres are small and cannot be removed. If they remained visible in normal light or UV they would become chopped up in reprocessing and the small fragments would contaminate the paper. Therefore they should ideally be made in such a way as to lose their colour or fluorescence in re-cycling to enable the waste paper to be re-used.

Polymer planchettes are unpopular with both paper makers and printers. To bond to the paper they need to be coated with an adhesive but those that are on or very close to the surface of the paper have a tendency to be removed during the drying process by the adhesive sticking to the drying drum and forming a deposit. Planchettes are also unpopular with printers as the degree of adhesion to the paper is often less than perfect and the planchettes can loosen, becoming attached to the impression cylinder or offset blanket, and subsequently causing circular voids in the printed image. Voids are left in banknotes if they come off in circulation.

Security Value

The security value of overt fibres as a public feature is open to question. Not only are they insufficiently perceptible to the untrained eye, but they can easily be replicated by digital scanners, copiers, or offset print. On the other hand, overt planchettes because of

Continued on page 10

TECHNOLOGY NEWS

Hyperlabel's New System for Document Serialisation

Hyperlabel Technologies Inc, a new company based in the US, has launched *Hyperlabel*™, an ink-based tracking and authentication system with applications for both document and product security.

The system involves a 2D digital tag, approximately 4mm x 4mm, that is printed by ink-jet in infra-red ink so that it is invisible to the naked eye and does not interfere with the other printed features on documents, The tag encodes the item's unique identification (eg serial number), a secure digital signature and a coordinate grid that renders the tag interactive, and many thousands can be printed across the face of the document. The tags require line of sight and physical access to scan, but as the whole document is covered any part of the surface can be scanned to obtain the item ID. This 'multiple redundancy' allows omni-directional scanning so that the tag can be read at any point on the surface and from any position or angle, while the unit ID cannot be advertently or deliberately removed.

Interactive Links

The tag can also contain an encrypted signature code and can be made interactive so that interrogating the document at a given point with a scanner connected to a computer or mobile communications device will open a specified website. A document is covered in multiple tags, rather than a single, replicated tag. Each tag has slightly different grid coordinates, which is necessary for interactivity. Multiple hyperlinks can be created, and precisely located on the tag to align with visible printed graphics, allowing different parts of the document to connect to different websites. If the technology was used on banknotes for example, the unique code could look up information about the item using an online database, this persistent link and data acting as a strong deterrent for fraud throughout the lifetime of the document.

Low cost scanners for Hyperlabel tags will become widely available within the next two years. Those in development include sensors for use in mobile phones, USB 'pen' peripherals for PCs, wireless 'pens' and laser scanners for supermarket checkouts. Other possible scanners include devices suitable for currency counters and ATMs. Each will be based on an IR-sensitive chip incorporating an image sensor, a force sensor or switch, processor and - in wireless readers – a radio and transmitting antenna. Because the tags can be read at any orientation at any point on the printed surface, it is not dependent on the relative geometry of the document and reader.

Low Unit Cost

According to Hyperlabel, its system enables authentication, online track and trace and the establishment of the document's pedigree at a low cost per tagged item compared with other systems. As well as providing a means of authenticating and monitoring banknotes in circulation, the track and trace aspect of the system could be used to track each transaction, including time, location and the parties to the transaction (although with anonymity being one of the major perceived benefits of cash, it is questionable whether this aspect of the system would ever be adopted).

Counterfeiters might, over time, become able to duplicate and print infrared tags with the correct spectral properties but, says the company, they will not able to create a valid, new digital signature. Counterfeits can be identified the first time they are scanned, and evidence of suspect transactions traced though a secure audit trail.

EPC Conformance

Hyperlabel's parent company, which it has declined at this stage to name, has funded the R&D for several years. The algorithms, software, IR ink and readers were developed in-house and are covered by patents issued and pending in the US and internationally. The ink can be customized so that different users have specific inks with unique characteristics and reader frequencies. The infrastructural investment would be comparable to that of RFID, according to senior vice-president Don Korn, but without its associated heavy unit costs or privacy issues. However, like RFID, the system conforms to the EPC global standards for information encoded in the tags.

Hyperlabel Technologies is based in Florida, with its main R&D facilities in Ireland and Australia. The company currently has around 30 employees.

Tell-Tale Signs... cont'd

their size are much more visible, the iridescent and holographic varieties especially so. These have the added advantage of not being accurately replicated by digital techniques which do not show the iridescent or diffractive effects. Another way of involving the public in the authentication of overt planchettes is to issue instructions to pick them off the notes, as the Bank of Canada did in the recent counterfeiting 'run' of the old series, (on the basis that, if the banknote was genuine, the planchettes could be removed). But getting the public to authenticate notes by damaging them is not a practice likely to find favour amongst issuing authorities trying to improve the condition of notes in circulation!

The security value of semi-covert and covert fibres, planchettes and (in the future possibly) a-Dots is not open to question, however, as they have been proven to be a low-cost but effective security feature. Of course, the best solution may just be a combination of these overt and covert features. Given that some 60% of the world's currencies have adopted them, and taking into account the technical progress being made, it is likely they will be around for some time to come.

Security thread

From Wikipedia, the free encyclopedia.
Jump to: navigation, search

A **security thread** is a security feature of many bank notes to protect against counterfeiting, consisting of a thin ribbon which is threaded through the note's paper.

Usually, the ribbon runs vertically, and is "woven" into the paper, so that it at some places emerges on the front side and at the remaining places at the rear side of the paper.

Usually, it is made of metal foil, but sometimes of plastic. Often, it has some text or numbers (e.g. the denomination) engraved.

If you let light shine through the bill, you can check whether it is really woven and not printed on it by making sure that you see one continuous line. Also, check that a metal thread really has its metallic shine.

Retrieved from "http://en.wikipedia.org/wiki/Security_thread"

Categories: Money forgery